

13. The method of claim 11, comprising depositing the silicon layer in a reducing environment.
14. The method of claim 13, wherein the reducing atmosphere comprises a mixture of hydrogen and silane.
15. The method of claim 11, comprising depositing the silicon layer at a pressure of less than about  $0.1 \times 10^5$  Pa.
16. The method of claim 11, comprising forming defects in an implantation process.
17. The method of claim 16, comprising forming defects by implanting atoms.
18. The method of claim 16, comprising forming defects by implanting ions.
19. The method of claim 16, comprising forming defects by implanting elements selected from the group consisting of fluorine, silicon, germanium, boron, indium, phosphorous, arsenic, and antimony.
20. The method of claim 19, comprising forming defects by implanting fluorine atoms.
21. The method of claim 16, further comprising depositing an oxide layer having a thickness of less than 10 nm on the surface of the region prior to the implantation step and removing the oxide layer after the implantation step.
22. The method of claim 11, comprising forming defects by an etching process that directs ions toward the region.

23. The method of claim 11, comprising forming interstitial defects in the region with an atomic proportion of one defect per one hundred silicon atoms.

24. The method of claim 11, wherein the region has a depth of less than 5 nm.

25. The method of claim 11, further comprising forming a window in a layer on the substrate to expose the region.

26. The method of claim 25, wherein the window has a width of less than 5 microns.

27. The method of claim 11, wherein the silicon layer has a different crystalline orientation than the substrate.

28. The method of claim 11, wherein the substrate is a silicon substrate.

29. The method of claim 11, wherein the substrate is a single crystal.

30. The method of claim 11, wherein the silicon layer is a single crystal.

31. The method of claim 11, wherein the region comprises an emitter of a bipolar transistor.

32. A method comprising:  
forming defects in a region of a single-crystal silicon substrate; and  
depositing a single-crystal silicon layer on the region, the silicon layer having a different crystalline orientation than the substrate.

33. The method of claim 32, comprising depositing the silicon layer prior to annealing the substrate.

34. The method of claim 32, comprising depositing the silicon layer at a temperature of less than 900 °C.

35. The method of claim 34, comprising depositing the silicon layer at a temperature of less than 750 °C.

36. The method of claim 32, comprising depositing the silicon layer in a reducing environment including a mixture of hydrogen and silane.

37. The method of claim 32, comprising depositing the silicon layer at a pressure of less than about  $0.1 \times 10^5$  Pa.

38. The method of claim 32, comprising forming defects in an implantation process.

39. The method of claim 38, further comprising depositing an oxide layer having a thickness of less than 10 nm on the region prior to the implantation process.

40. The method of claim 32, comprising forming interstitial defects in the region with an atomic proportion of one defect per one hundred silicon atoms.

41. The method of claim 32, wherein the region has a depth of less than 5 nm.

42. The method of claim 32, further comprising forming a window in a layer on the substrate to expose the region.